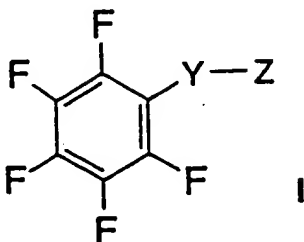


WHAT IS CLAIMED IS:

1. A pharmaceutical composition comprising a pharmaceutically acceptable excipient and a compound of formula I:



or a pharmaceutically acceptable salt thereof, wherein:

Y is -S(O)- or -S(O)<sub>2</sub>-; and

Z is -NR<sup>1</sup>R<sup>2</sup> or -OR<sup>3</sup>; wherein R<sup>1</sup> and R<sup>2</sup> are independently selected from

hydrogen,

substituted or unsubstituted (C1-C10)alkyl,

substituted or unsubstituted (C1-C10)alkoxy,

substituted or unsubstituted (C3-C6)alkenyl,

substituted or unsubstituted (C2-C6)heteroalkyl,

substituted or unsubstituted (C3-C6)heteroalkenyl,

substituted or unsubstituted (C3-C6)alkynyl,

substituted or unsubstituted (C3-C8)cycloalkyl,

substituted or unsubstituted (C5-C7)cycloalkenyl,

substituted or unsubstituted (C5-C7)cycloalkadienyl,

substituted or unsubstituted aryl,

substituted or unsubstituted aryloxy,

substituted or unsubstituted aryl-(C3-C8)cycloalkyl,

substituted or unsubstituted aryl-(C5-C7)cycloalkenyl,

substituted or unsubstituted aryloxy-(C3-C8)cycloalkyl,

substituted or unsubstituted aryl-(C1-C4)alkyl,

substituted or unsubstituted aryl-(C1-C4)alkoxy,

substituted or unsubstituted aryl-(C1-C4)heteroalkyl,

substituted or unsubstituted aryl-(C3-C6)alkenyl,  
 substituted or unsubstituted aryloxy-(C1-C4)alkyl,  
 substituted or unsubstituted aryloxy-(C2-C4)heteroalkyl,  
 substituted or unsubstituted heteroaryl,  
 substituted or unsubstituted heteroaryloxy,  
 substituted or unsubstituted heteroaryl-(C1-C4)alkyl,  
 substituted or unsubstituted heteroaryl-(C1-C4)alkoxy,  
 substituted or unsubstituted heteroaryl-(C1-C4)heteroalkyl,  
 substituted or unsubstituted heteroaryl-(C3-C6)alkenyl,  
 substituted or unsubstituted heteroaryloxy-(C1-C4)alkyl, and  
 substituted or unsubstituted heteroaryloxy-(C2-C4)heteroalkyl,

wherein  $R^1$  and  $R^2$  may be connected by a linking group E to give a substituent of the formula



wherein E represents a bond, (C1-C4) alkylene, or (C1-C4) heteroalkylene, and the ring  
 formed by  $R^1$ , E,  $R^2$  and the nitrogen atom contains no more than 8 atoms;  
 and where  $R^3$  is a substituted or unsubstituted aryl or heteroaryl group, wherein said  
 compound I has pharmacological activity.

2. The composition of claim 1, wherein, in the compound of formula I,  
 Y is  $SO_2$  and  
 Z is  $NR^1R^2$ ; wherein  $R^2$  is optionally substituted aryl or optionally substituted  
 heteroaryl.
3. The composition of claim 2, wherein  $R^1$  is hydrogen or lower alkyl,  $R^2$  is optionally  
 substituted phenyl or optionally substituted pyridyl, and there is no linking group E between  
 $R^1$  and  $R^2$ .
4. The composition of claim 3, wherein  $R^1$  is hydrogen or methyl and  $R^2$  is substituted  
 phenyl, wherein the substituents on  $R^2$ , ranging in number from one to four, are

independently chosen from lower alkyl, hydroxy, lower alkoxy, amino optionally substituted with one or two lower alkyls, optionally substituted arylamino, optionally substituted heteroaryl amino, optionally substituted phenoxy, and halogen.

- 5 5. The composition of claim 4, wherein  $R^1$  is hydrogen and  $R^2$  is substituted phenyl, wherein the substituents on  $R^2$  are independently chosen from amino, (lower)alkylamino, and di(lower)alkylamino, and are located at one or more of positions 3- and 4- of the phenyl ring, in relation to the sulfonamido group.

- 10 6. The composition of claim 5, wherein the compound is  
4-(*N,N*-Dimethylamino)-1-pentafluorophenylsulfonamidobenzene,  
4-(*N,N*-Diethylamino)-1-pentafluorophenylsulfonamidobenzene,  
3-(*N,N*-Dimethylamino)-1-pentafluorophenylsulfonamidobenzene,  
4-Amino-1-pentafluorophenylsulfonamidobenzene, or  
15 4-(*N,N*-Dimethylamino)-1-pentafluorophenylsulfonamidobenzene hydrochloride.

7. The composition of claim 6, wherein the compound is  
4-(*N,N*-Dimethylamino)-1-pentafluorophenylsulfonamidobenzene.

- 20 8. The composition of claim 2, wherein the compound is  
Pentafluorophenylsulfonamidobenzene.

9. The composition of claim 3, wherein  $R^1$  is hydrogen, and  $R^2$  is phenyl substituted at positions 3- and 4-, in relation to the sulfonamido group, with a divalent moiety that forms a  
25 5- or 6- membered ring together with carbons 3- and 4- of the phenyl ring.

10. The composition of claim 9, wherein the divalent moiety is:  $-OCH_2CH_2O-$ ,  
 $-OCH_2O-$ ,  $-C=CNH-$ , or  $-C=NNH-$ .

- 30 11. The composition of claim 10, wherein the compound is  
1,2-Ethylenedioxy-4-pentafluorophenylsulfonamidobenzene,

A'  
cont

105007-6422660

1,2-Methylenedioxy-4-pentafluorophenylsulfonamidobenzene,  
 5-Pentafluorophenylsulfonamidoindazole, or  
 5-Pentafluorophenylsulfonamidoindole.

5 12. The composition of claim 4, wherein  $R^1$  is hydrogen, and the substituents on  $R^2$  are independently selected from halogen, hydroxy, lower alkyl, lower alkoxy, amino, (lower)alkylamino, and di(lower)alkylamino.

10 13. The composition of claim 12, wherein the substituents on  $R^2$  are independently selected from bromo, chloro, fluoro, hydroxy, methoxy, ethoxy, amino, and dimethylamino.

14. The composition of claim 13, wherein the substituents on  $R^2$  are independently selected from bromo, chloro, fluoro, hydroxy, methoxy, and ethoxy.

15 15. The composition of claim 12, wherein the substituents on  $R^2$  are at one or more of positions 3- and 4- of the phenyl ring, in relation to the sulfonamido group.

16. The composition of claim 15, wherein  $R^2$  is monosubstituted phenyl.

20 17. The composition of claim 16, wherein the compound is

4-Methoxy-1-pentafluorophenylsulfonamidobenzene,  
 3-Hydroxy-1-pentafluorophenylsulfonamidobenzene,  
 4-Hydroxy-1-pentafluorophenylsulfonamidobenzene,  
 4-Ethoxy-1-pentafluorophenylsulfonamidobenzene,  
 25 3-Ethoxy-1-pentafluorophenylsulfonamidobenzene,  
 3-Phenoxy-1-pentafluorophenylsulfonamidobenzene,  
 3-Methoxy-1-pentafluorophenylsulfonamidobenzene, or  
 4-*tert*-Butoxy-1-pentafluorophenylsulfonamidobenzene.

30 18. The composition of claim 16, wherein the compound is  
 3-Chloro-1-pentafluorophenylsulfonamidobenzene, or

F03034-6422660

A1  
cont

o-1-pentafluoro, -nylsulfonamidobenzene.

The composition of claim 15, wherein R<sup>2</sup> is disubstituted

The composition of claim 19, wherein the compound is  
methoxy-4-pentafluorophenylsulfonamidobenzene,  
oxy-1-methoxy-4-pentafluorophenylsulfonamidobenzene,  
hydroxy-4-pentafluorophenylsulfonamidobenzene,  
oxy-1-methoxy-4-pentafluorophenylsulfonamidobenzene,  
oxy-1-methoxy-4-pentafluorophenylsulfonamidobenzene,

The composition of claim 19, wherein  
ro-1-methoxy-4-pentafluorophenylsulfonamidobenzene,  
no-1-methoxy-4-pentafluorophenylsulfonamidobenzene,  
ro-1-methoxy-4-pentafluorophenylsulfonamidobenzene,  
ro-1-methoxy-4-pentafluorophenylsulfonamidobenzene, s  
ro-1-methoxy-4-pentafluorophenylsulfonamidobenzene, p

The composition of claim 20, wherein  
oxy-1-methoxy-4-pentafluorophenylsulfonamidobenzene

he composition of claim 20, wherein the compound is  
droxy-1-methoxy-4-pentafluorophenylsulfonamidobenzene

The composition of claim 21, wherein the compound is  
ro-1-methoxy-4-pentafluorophenylsulfonamidobenzene.

The composition of claim 21, wherein the compound is  
ro-1-methoxy-4-pentafluorophenylsulfonamidobenzene, s

The composition of claim 21, wherein the compound is

20. The composition of claim 19, wherein the compound is

~~2-Hydroxy-1-methoxy-4-pentafluorophenylsulfonamidobenzene,~~

~~2-Hydroxy-1-methoxy-4-pentafluorophenylsulfonamidobenzene, monosodium salt, or~~

21. The composition of claim 19, wherein the compound is

**2-Bromo-1-methoxy-4-pentafluorophenylsulfonamidobenzene,**

2-Fluoro-1-methoxy-4-pentafluorophenylsulfonamidobenzene, sodium salt, or

2-Fluoro-1-methoxy-4-pentafluorophenylsulfonamidobenzene, potassium salt.

~~2-Hydroxy-1-methoxy-4-pentafluorophenylsulfonamidobenzene.~~

~~2-Hydroxy-1-methoxy-4-pentafluorophenylsulfonamidobenzene, monosodium salt.~~

**2-Fluoro-1-methoxy-4-pentafluorophenylsulfonamidobenzene.**

2-Fluoro-1-methoxy-4-pentafluorophenylsulfonamidobenzene, sodium salt.

26. The composition of claim 21, wherein the compound is

2-Fluoro-1-methoxy-4-pentafluorophenylsulfonamidobenzene, potassium salt.

27. The composition of claim 12, wherein  $R^2$  is a trisubstituted phenyl.

5 28. The composition of claim 21, wherein the compound is  
2-Bromo-1-methoxy-4-pentafluorophenylsulfonamidobenzene, or  
2-Chloro-1-methoxy-4-pentafluorophenylsulfonamidobenzene.

10 29. The composition of claim 12, wherein the compound is  
1,2-Dimethyl-4-pentafluorophenylsulfonamidobenzene.

30. The composition of claim 1, wherein in the compound of formula I,  
Y is  $SO_2$  and

15 Z is  $NR^1R^2$ , where  $R^1$  is hydrogen or lower alkyl, and  $R^2$  is an unsubstituted or  
optionally substituted naphthyl group.

31. The composition of claim 30, wherein the compound is  
7-Hydroxy-2-pentafluorophenylsulfonamidonaphthalene.

20 32. The composition of claim 4, wherein  $R^2$  is a phenyl group substituted by phenoxy or  
optionally substituted phenoxy.

33. The composition of claim 32, wherein the compound is  
3-Phenoxy-1-pentafluorophenylsulfonamidobenzene.

25 34. The composition of claim 3, wherein  $R^2$  is a phenyl ring substituted by a heterocyclic  
group at the 4- position, in relation to the sulfonamido group.

30 35. The composition of claim 17, wherein the compound is  
4-Methoxy-1-pentafluorophenylsulfonamidobenzene.

a1  
cont

105007-5422660

36. The composition of claim 2, wherein R<sup>1</sup> and R<sup>2</sup> are covalently joined in a moiety that forms a 5- or 6- membered heterocyclic ring with the nitrogen atom of NR<sup>1</sup>R<sup>2</sup>.

37. The composition of claim 36, wherein R<sup>1</sup> is a -CH=CH- group linked to the 2-position of the R<sup>2</sup> phenyl group, in relation to the sulfonamido group, forming an optionally substituted indole.

38. The composition of claim 37, wherein the compound is 1-pentafluorophenylsulfonylindole.

39. The composition of claim 36, wherein R<sup>1</sup> is a -(CH<sub>2</sub>)<sub>3</sub>- group linked to the 2- position of the R<sup>2</sup> phenyl group, in relation to the sulfonamido group, forming an optionally substituted 1,2,3,4-tetrahydroquinoline.

40. The composition of claim 39, wherein the compound is 1-pentafluorophenylsulfonyl-1,2,3,4-tetrahydroquinoline.

41. The composition of claim 2, wherein R<sup>1</sup> is an optionally substituted (C2-C10)alkyl or optionally substituted (C2-C6)heteroalkyl.

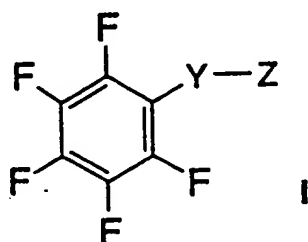
42. The composition of claim 41, wherein the compound is  
2-Hydroxy-1-methoxy-4-[N-(5-hydroxypent-1-yl)pentafluorophenyl-sulfonamido]benzene,  
4-Methoxy-1-[N-(2-propenyl)pentafluorophenylsulfonamido]benzene,  
4-Methoxy-1-[N-(4-pentenyl)pentafluorophenylsulfonamido]benzene,  
1-[N-(2,3-Dihydroxypropyl) pentafluorophenylsulfonamido]-4-methoxybenzene,  
1-[N-(3,4-Dihydroxybutyl)pentafluorophenylsulfonamido]-4-methoxybenzene,  
1-[N-(4,5-Dihydroxypentyl)pentafluorophenylsulfonamido]-4-methoxybenzene,  
1-[N-(4-hydroxybutyl)pentafluorophenylsulfonamido]-4-methoxybenzene, or  
4-Methoxy-1-[N-(5-hydroxypentyl)pentafluorophenylsulfonamido]benzene.

43. A method of treating or preventing a disease state characterized by abnormally high

a'  
cont

0032243-10504  
10504-2422660

levels of low density lipoprotein particles or cholesterol in the blood, which method comprises administering to a mammalian subject in need thereof a therapeutically effective amount of a composition containing a compound of formula I



10 or a pharmaceutically acceptable salt thereof, wherein:

Y is -S(O)- or -S(O)<sub>2</sub>-;

Z is -NR<sup>1</sup>R<sup>2</sup> or -OR<sup>3</sup>; where R<sup>1</sup> and R<sup>2</sup> are independently selected from

hydrogen,

substituted or unsubstituted (C1-C10)alkyl,

substituted or unsubstituted (C1-C10)alkoxy,

substituted or unsubstituted (C3-C6)alkenyl,

substituted or unsubstituted (C2-C6)heteroalkyl,

substituted or unsubstituted (C3-C6)heteroalkenyl,

substituted or unsubstituted (C3-C6)alkynyl,

substituted or unsubstituted (C3-C8)cycloalkyl,

substituted or unsubstituted (C5-C7)cycloalkenyl,

substituted or unsubstituted (C5-C7)cycloalkadienyl,

substituted or unsubstituted aryl,

substituted or unsubstituted aryloxy,

substituted or unsubstituted aryl-(C3-C8)cycloalkyl,

substituted or unsubstituted aryl-(C5-C7)cycloalkenyl,

substituted or unsubstituted aryloxy-(C3-C8)cycloalkyl,

substituted or unsubstituted aryl-(C1-C4)alkyl,

substituted or unsubstituted aryl-(C1-C4)alkoxy,

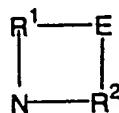
substituted or unsubstituted aryl-(C1-C4)heteroalkyl,

substituted or unsubstituted aryl-(C3-C6)alkenyl,



substituted or unsubstituted aryloxy-(C1-C4)alkyl,  
 substituted or unsubstituted aryloxy-(C2-C4)heteroalkyl,  
 substituted or unsubstituted heteroaryl,  
 substituted or unsubstituted heteroaryloxy,  
 substituted or unsubstituted heteroaryl-(C1-C4)alkyl,  
 substituted or unsubstituted heteroaryl-(C1-C4)alkoxy,  
 substituted or unsubstituted heteroaryl-(C1-C4)heteroalkyl,  
 substituted or unsubstituted heteroaryl-(C3-C6)alkenyl,  
 substituted or unsubstituted heteroaryloxy-(C1-C4)alkyl, and  
 substituted or unsubstituted heteroaryloxy-(C2-C4)heteroalkyl,

wherein R<sup>1</sup> and R<sup>2</sup> may be connected by a linking group E to give a substituent of the formula



wherein E represents a bond, (C1-C4) alkylene, or (C1-C4) heteroalkylene, and the  
 ring formed by R<sup>1</sup>, E, R<sup>2</sup> and the nitrogen contains no more than 8 atoms;  
 and where R<sup>3</sup> is optionally substituted aryl or optionally substituted heteroaryl.

44. The method of claim 43 wherein, in the compound of formula I,  
 Y is SO<sub>2</sub> and

Z is NR<sup>1</sup>R<sup>2</sup>; where R<sup>2</sup> is optionally substituted aryl or optionally substituted  
 heteroaryl.

45. The method of claim 44, wherein R<sup>1</sup> is hydrogen or lower alkyl, R<sup>2</sup> is optionally  
 substituted phenyl, and there is no linking group E between R<sup>1</sup> and R<sup>2</sup>.

46. The method of claim 45, wherein R<sup>1</sup> is hydrogen or methyl, and the substituents on  
 R<sup>2</sup> are independently chosen from lower alkyl, hydroxy, lower alkoxy, amino, amino  
 optionally substituted with one or two lower alkyls, optionally substituted arylamino,  
 optionally substituted heteroarylamino, optionally substituted phenoxy, and halogen.

47. The method of claim 46, wherein the compound is chosen from:

4-(N,N-Dimethylamino)-1-pentafluorophenylsulfonamidobenzene,

3-(N,N-Dimethylamino)-1-pentafluorophenylsulfonamidobenzene,

1,2-Ethylenedioxy-4-pentafluorophenylsulfonamidobenzene,

5 1,2-Methylenedioxy-4-pentafluorophenylsulfonamidobenzene,

1,2-Dimethoxy-4-pentafluorophenylsulfonamidobenzene,

2-Hydroxy-1-methoxy-4-pentafluorophenylsulfonamidobenzene,

2-Fluoro-1-methoxy-4-pentafluorophenylsulfonamidobenzene,

4-Methoxy-1-pentafluorophenylsulfonamidobenzene,

10 3-Hydroxy-1-pentafluorophenylsulfonamidobenzene,

4-Hydroxy-1-pentafluorophenylsulfonamidobenzene,

1,2-Dimethyl-4-pentafluorophenylsulfonamidobenzene,

4-(N,N-Diethylamino)-1-pentafluorophenylsulfonamidobenzene,

4-Amino-1-pentafluorophenylsulfonamidobenzene,

15 Pentafluorophenylsulfonamidobenzene,

5-Pentafluorophenylsulfonamidoindazole,

5-Pentafluorophenylsulfonamidoindole,

4-(N,N-Dimethylamino)-1-(N-methylpentafluorophenylsulfonamido)benzene,

4-(N,N-Dimethylamino)-1-(pentafluorophenylsulfonamido)benzene,

20 1,2-Dihydroxy-4-pentafluorophenylsulfonamidobenzene,

4-Ethoxy-1-pentafluorophenylsulfonamidobenzene,

3,5-Dimethoxy-1-pentafluorophenylsulfonamidobenzene,

3-Ethoxy-1-pentafluorophenylsulfonamidobenzene,

7-Hydroxy-2-pentafluorophenylsulfonamidonaphthalene,

25 3-Phenoxy-1-pentafluorophenylsulfonamidobenzene,

3-Methoxy-1-pentafluorophenylsulfonamidobenzene,

4(1-Morpholino)-1-pentafluorophenylsulfonamidobenzene,

5-Pentafluorophenylsulfonamido-1,2,3-trimethoxybenzene,

2-Hydroxy-1,3-methoxy-5-pentafluorophenylsulfonamidobenzene,

30 1,2-Dihydroxy-3-methoxy-5-pentafluorophenylsulfonamidobenzene,

5-Pentafluorophenylsulfonamido-1,2,3-trihydroxybenzene,

a'  
cont

Publ. No. 4,422,660

- 1,3-Dimethoxy-2-hydroxy-5-pentafluorophenylsulfonamidobenzene,  
 1,2-Dihydroxy-3-methoxy-5-pentafluorophenylsulfonamidobenzene,  
 5-Pentafluorophenylsulfonamido-1,2,3-trihydroxybenzene,  
 3-Hydroxy-5-methoxy-1-pentafluorophenylsulfonamidobenzene,  
 5 3,5-Dihydroxy-1-pentafluorophenylsulfonamidobenzene,  
 2-Fluoro-1-methoxy-4-(N-methylpentafluorophenylsulfonamido)benzene,  
 2-Bromo-1-methoxy-4-pentafluorophenylsulfonamidobenzene,  
 2-Chloro-1-methoxy-4-pentafluorophenylsulfonamidobenzene,  
 4-(N,N-Dimethylamino)-1-pentafluorophenylsulfonamidobenzene hydrochloride,  
 10 3,4-Difluoro-1-pentafluorophenylsulfonamidobenzene,  
 4-Trifluoromethoxy-1-pentafluorophenylsulfonamidobenzene,  
 2-Chloro-5-pentafluorophenylsulfonamidopyridine,  
 2-Hydroxy-1-methoxy-4-[N-(5-hydroxypentyl)pentafluorophenylsulfonamido]benzene,  
 4-(1,1-Dimethyl)ethoxy-1-pentafluorophenylsulfonamidobenzene,  
 15 2-Bromo-3-hydroxy-4-methoxy-1-pentafluorophenylsulfonamidobenzene,  
 2-Bromo-4-methoxy-5-hydroxy-1-pentafluorophenylsulfonamidobenzene,  
 1-Bromo-4-fluoro-5-methoxy-2-pentafluorophenylsulfonamidobenzene,  
 2-Hydroxy-1-methoxy-4-pentafluorophenylsulfonamidobenzene; sodium salt,  
 2-Hydroxy-1-methoxy-4-pentafluorophenylsulfonamidobenzene; potassium salt,  
 20 2-Fluoro-1-methoxy-4-pentafluorophenylsulfonamidobenzene; sodium salt,  
 2-Fluoro-1-methoxy-4-pentafluorophenylsulfonamidobenzene; potassium salt,  
 3-Chloro-1-pentafluorophenylsulfonamidobenzene,  
 4-Chloro-1-pentafluorophenylsulfonamidobenzene,  
 3-Nitro-1-pentafluorophenylsulfonamidobenzene,  
 25 4-Methoxy-1-pentafluorophenylsulfonamido-3-trifluoromethylbenzene,  
 4-Methoxy-1-(N-(2-propenyl)pentafluorophenylsulfonamido)benzene,  
 1-(N-(3-Butenyl)pentafluorophenylsulfonamido)-4-methoxybenzene,  
 4-Methoxy-1-(N-(4-pentenyl)pentafluorophenylsulfonamido)benzene,  
 1-(N-(2,3-Dihydroxypropyl)pentafluorophenylsulfonamido)-4-methoxybenzene,  
 30 1-(N-(3,4-Dihydroxybutyl)pentafluorophenylsulfonamido)-4-methoxybenzene,  
 1-(N-(4,5-Dihydroxypentyl)pentafluorophenylsulfonamido)-4-methoxybenzene,

a!  
cont

F05007-5422660

1-(N-(4-hydroxybutyl)pentafluorophenylsulfonamido)-4-methoxybenzene,  
 4-Methoxy-1-(N-(5-hydroxypentyl)pentafluorophenylsulfonamido)benzene,  
 4-Methoxy-3-nitro-1-pentafluorophenylsulfonamidobenzene,  
 3-Amino-4-methoxy-1-pentafluorophenylsulfonamidobenzene,  
 5 4-Butoxy-1-pentafluorophenylsulfonamidobenzene,  
 1-Pentafluorophenylsulfonamido-4-phenoxybenzene,  
 4-Benzyloxy-1-pentafluorophenylsulfonamidobenzene,  
 4-Methylmercapto-1-pentafluorophenylsulfonamidobenzene,  
 2-Methoxy-1-pentafluorophenylsulfonamidobenzene,  
 10 4-Allyloxy-1-pentafluorophenylsulfonamidobenzene,  
 1-Pentafluorophenylsulfonamido-4-propoxybenzene,  
 4-(1-Methyl)ethoxy-1-pentafluorophenylsulfonamidobenzene,  
 1-Pentafluorophenylsulfonyloxybenzene,  
 1-Pentafluorophenylsulfonylindole,  
 15 1-Pentafluorophenylsulfonyl-1,2,3,4-tetrahydroquinoline,  
 2-Methoxy-5-pentafluorophenylsulfonamidopyridine,  
 2-Fluoro-1-methoxy-4-pentafluorophenylsulfonamide,  
 4-*tert*-Butoxy-1-pentafluorophenylsulfonamidobenzene, and  
 2-Anilino-3-pentafluorophenylsulfonamidopyridine.

48. The method of claim 47, wherein the compound is chosen from:

4-(N,N-Dimethylamino)-1-pentafluorophenylsulfonamidobenzene,  
 3-(N,N-Dimethylamino)-1-pentafluorophenylsulfonamidobenzene,  
 1,2-Ethylenedioxy-4-pentafluorophenylsulfonamidobenzene,  
 25 2-Hydroxy-1-methoxy-4-pentafluorophenylsulfonamidobenzene,  
 2-Fluoro-1-methoxy-4-pentafluorophenylsulfonamidobenzene,  
 4-Methoxy-1-pentafluorophenylsulfonamidobenzene,  
 3-Hydroxy-1-pentafluorophenylsulfonamidobenzene,  
 4-Hydroxy-1-pentafluorosulfonamidobenzene,  
 30 1,2-Dimethyl-4-pentafluorophenylsulfonamidobenzene,  
 5-Pentafluorophenylsulfonamidoindole,

a'  
cont

1000-442660

4-(N,N-Dimethylamino)-1-(N-methylpentafluorophenylsulfonamido)benzene,  
 4-Ethoxy-1-pentafluorophenylsulfonamidobenzene,  
 3-Methoxy-1-pentafluorophenylsulfonamidobenzene,  
 2-Bromo-1-methoxy-4-pentafluorophenylsulfonamidobenzene,  
 2-Chloro-1-methoxy-4-pentafluorophenylsulfonamidobenzene,  
 2-Bromo-3-hydroxy-4-methoxy-1-pentafluorophenylsulfonamidobenzene,  
 2-Bromo-4-methoxy-5-hydroxy-1-pentafluorophenylsulfonamidobenzene,  
 1-Bromo-4-fluoro-5-methoxy-2-pentafluorophenylsulfonamidobenzene,  
 2-Hydroxy-1-methoxy-4-pentafluorophenylsulfonamidobenzene; monosodium salt,  
 2-Hydroxy-1-methoxy-4-pentafluorophenylsulfonamidobenzene; monopotassium salt,  
 2-Fluoro-1-methoxy-4-pentafluorophenylsulfonamidobenzene; sodium salt,  
 2-Fluoro-1-methoxy-4-pentafluorophenylsulfonamidobenzene; potassium salt, -  
 4-Chloro-1-pentafluorophenylsulfonamidobenzene, and  
 3-Amino-4-methoxy-1-pentafluorophenylsulfonamidobenzene.

49. The method of claim 48, wherein the compound is:

2-Hydroxy-1-methoxy-4-pentafluorophenylsulfonamidobenzene,  
 2-Fluoro-1-methoxy-4-pentafluorophenylsulfonamidobenzene,  
 4-Methoxy-1-pentafluorophenylsulfonamidobenzene,  
 1,2-Dimethyl-4-pentafluorophenylsulfonamidobenzene,  
 5-Pentafluorophenylsulfonamidoindole,  
 4-Ethoxy-1-pentafluorophenylsulfonamidobenzene,  
 2-Bromo-1-methoxy-4-pentafluorophenylsulfonamidobenzene,  
 2-Chloro-1-methoxy-4-pentafluorophenylsulfonamidobenzene,  
 2-Bromo-3-hydroxy-4-methoxy-1-pentafluorophenylsulfonamidobenzene,  
 2-Bromo-4-methoxy-5-hydroxy-1-pentafluorophenylsulfonamidobenzene,  
 1-Bromo-4-fluoro-5-methoxy-2-pentafluorophenylsulfonamidobenzene,  
 2-Hydroxy-1-methoxy-4-pentafluorophenylsulfonamidobenzene; monosodium salt,  
 2-Hydroxy-1-methoxy-4-pentafluorophenylsulfonamidobenzene; monopotassium salt,  
 2-Fluoro-1-methoxy-4-pentafluorophenylsulfonamidobenzene; sodium salt,  
 2-Fluoro-1-methoxy-4-pentafluorophenylsulfonamidobenzene; potassium salt, or

a'  
cont

195007-5142260

3-Amino-4-methoxy-1-pentafluorophenylsulfonamidobenzene.

50. The method of claim 49, wherein the compound is

2-Hydroxy-1-methoxy-4-pentafluorophenylsulfonamidobenzene,

2-Hydroxy-1-methoxy-4-pentafluorophenylsulfonamidobenzene; monosodium salt, or

2-Hydroxy-1-methoxy-4-pentafluorophenylsulfonamidobenzene; monopotassium salt.

51. The method of claim 49, wherein the compound is

2-Fluoro-1-methoxy-4-pentafluorophenylsulfonamidobenzene.

10

52. The method of claim 49, wherein the compound is

2-Fluoro-1-methoxy-4-pentafluorophenylsulfonamidobenzene, sodium salt.

53. The method of claim 49, wherein the compound is

2-Fluoro-1-methoxy-4-pentafluorophenylsulfonamidobenzene, potassium salt.

54. The method of claim 43 wherein the disease state is atherosclerosis.

55. The method of claim 43 wherein the disease state is pancreatitis.

56. The method of claim 43 wherein the disease state is hypercholesterolemia.

57. The method of claim 43 wherein the disease state is hyperlipoproteinemia.

58. The method of claim 43 wherein the composition is administered orally.

59. The method of claim 43 wherein the subject is human.

60. The method of claim 43 wherein the composition is administered in combination with a therapeutically effective amount of a hypolipemic agent or a hypocholesterolemic agent that is not represented by formula I.

a1  
cont

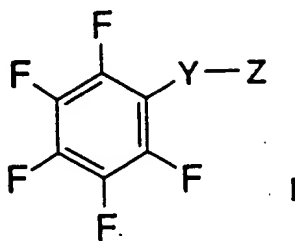
105007-272260

20

25

30

61. A compound having the formula I:



or a pharmaceutically acceptable salt thereof, wherein:

10 Y is -S(O)- or -S(O<sub>2</sub>)-; and

Z is NR<sup>1</sup>R<sup>2</sup>, wherein R<sup>2</sup> is an optionally substituted aryl or heteroaryl group, and R<sup>1</sup> is selected from

hydrogen,

substituted or unsubstituted (C1-C10)alkyl,

substituted or unsubstituted (C1-C10)alkoxy,

substituted or unsubstituted (C3-C6)alkenyl,

substituted or unsubstituted (C2-C6)heteroalkyl,

substituted or unsubstituted (C3-C6)heteroalkenyl,

substituted or unsubstituted (C3-C6)alkynyl,

substituted or unsubstituted (C3-C8)cycloalkyl,

substituted or unsubstituted (C5-C7)cycloalkenyl,

substituted or unsubstituted (C5-C7)cycloalkadienyl,

substituted or unsubstituted aryl,

substituted or unsubstituted aryloxy,

substituted or unsubstituted aryl-(C3-C8)cycloalkyl,

substituted or unsubstituted aryl-(C5-C7)cycloalkenyl,

substituted or unsubstituted aryloxy-(C3-C8)cycloalkyl,

substituted or unsubstituted aryl-(C1-C4)alkyl,

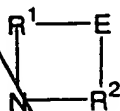
substituted or unsubstituted aryl-(C1-C4)alkoxy,

substituted or unsubstituted aryl-(C1-C4)heteroalkyl,

substituted or unsubstituted aryl-(C3-C6)alkenyl,

substituted or unsubstituted aryloxy-(C1-C4)alkyl,  
 substituted or unsubstituted aryloxy-(C2-C4)heteroalkyl,  
 substituted or unsubstituted heteroaryl,  
 substituted or unsubstituted heteroaryloxy,  
 substituted or unsubstituted heteroaryl-(C1-C4)alkyl,  
 substituted or unsubstituted heteroaryl-(C1-C4)alkoxy,  
 substituted or unsubstituted heteroaryl-(C1-C4)heteroalkyl,  
 substituted or unsubstituted heteroaryl-(C3-C6)alkenyl,  
 substituted or unsubstituted heteroaryloxy-(C1-C4)alkyl, and  
 substituted or unsubstituted heteroaryloxy-(C2-C4)heteroalkyl,

wherein R<sup>1</sup> and R<sup>2</sup> may be connected by a linking group E to give a substituent of the formula



wherein E represents a bond, (C1-C4) alkylene, or (C1-C4) heteroalkylene, and the ring formed by R<sup>1</sup>, E, R<sup>2</sup> and the nitrogen contains no more than 8 atoms;

provided that:

in the case that Y is -S(O<sub>2</sub>)-, and R<sup>1</sup> is hydrogen or methyl, then R<sup>2</sup> is substituted phenyl or heteroaryl group;

in the case that Y is -S(O<sub>2</sub>)- and R<sup>2</sup> is a ring system chosen from 1-naphthyl, 5-quinolyl, or 4-pyridyl, then either R<sup>1</sup> is not hydrogen or R<sup>2</sup> is substituted by at least one substituent that is not hydrogen;

in the case that Y is -S(O<sub>2</sub>)-, R<sup>2</sup> is phenyl, and R<sup>1</sup> is a propylene unit attaching the nitrogen of -NR<sup>1</sup>R<sup>2</sup>- to the 2- position of the phenyl ring in relation to the sulfonamido group to form a 1,2,3,4-tetrahydroquinoline system, and one or more of the remaining valences on the bicyclic system so formed is substituted with at least one substituent that is not hydrogen;

in the case that Y is -S(O<sub>2</sub>)- and R<sup>2</sup> is phenyl substituted with 3-(1-hydroxyethyl), 3-dimethylamino, 4-dimethylamino, 4-phenyl, 3-hydroxy, 3-hydroxy-4-diethylaminomethyl, 3,4-methylenedioxy, 3,4-ethylenedioxy, 2-(1-pyrrolyl), or 2-methoxy-4-(1-morpholino), then either R<sup>1</sup> is not hydrogen or when R<sup>1</sup> is hydrogen, one or more of the remaining valences

a'  
cont

FOIA b7 - Excluded



on the phenyl ring of  $R^2$  is substituted with a substituent that is not hydrogen;

in the case that Y is  $-S(O_2)-$  and  $R^2$  is 2-methylbenzothiazol-5-yl, 6-hydroxy-4-methyl-pyrimidin-2-yl, 3-carbomethoxypyrazin-2-yl, 5-carbomethoxypyrazin-2-yl, 4-carboethoxy-1-phenylpyrazol-5-yl, 3-methylpyrazol-5-yl, 4-chloro-2-methylthiopyrimidin-6-yl, 2-trifluoromethyl-1,3,4-thiadiazol-5-yl, 5,6,7,8-tetrahydro-2-naphthyl, 4-methylthiazol-2-yl, 6,7-dihydroindan-5-yl, 7-chloro-5-methyl-1,8-naphthyridin-2-yl, 5,7-dimethyl-1,8-naphthyridin-2-yl, or 3-cyanopyrazol-4-yl, then  $R^1$  is a group other than hydrogen;

wherein said compound has pharmacological activity.

10

62. The compound of claim 61, wherein  $R^1$  is hydrogen or lower alkyl, Y is  $-S(O_2)-$ , and there is no linking group E between  $R^1$  and  $R^2$ .

63. The compound of claim 62, wherein  $R^1$  is hydrogen or methyl and  $R^2$  is substituted phenyl, wherein the substituents on  $R^2$ , ranging in number from one to four, are independently chosen from lower alkyl, hydroxy, lower alkoxy, amino optionally substituted with one or two lower alkyls, optionally substituted arylamino, optionally substituted heteroaryl amino, optionally substituted phenoxy, and halogen.

64. The compound of claim 63, wherein  $R^1$  is hydrogen and  $R^2$  is substituted phenyl, wherein the substituents on  $R^2$  are independently chosen from amino, (lower)alkylamino, and di(lower)alkylamino, and are located at one or more of positions 3- and 4- of the phenyl ring, in relation to the sulfonamido group.

65. The compound of claim 64, wherein the compound is 4-(N,N-Diethylamino)-1-pentafluorophenylsulfonamidobenzene, or 4-Amino-1-pentafluorophenylsulfonamidobenzene.

66. The compound of claim 62, wherein  $R^1$  is hydrogen, and  $R^2$  is phenyl substituted at positions 3- and 4-, in relation to the sulfonamido group, with a divalent moiety that forms a 5- or 6- membered ring together with carbons 3- and 4- of the phenyl ring.

Q' 5  
Cont

105007-CH-2660

20

25

30

67. The compound of claim 66, wherein the divalent moiety is:  $-C=CNH-$ , or  $-C=NNH-$ .

68. The compound of claim 67, wherein the compound is 5-Pentafluorophenylsulfonamidindazole or 5-Pentafluorophenylsulfonamidindole.

69. The compound of claim 63, wherein  $R^1$  is hydrogen, and the substituents on  $R^2$  are independently selected from halogen, hydroxy, lower alkyl, lower alkoxy, amino, (lower)alkylamino, and di(lower)alkylamino.

70. The compound of claim 69, wherein the substituents on  $R^2$  are independently selected from bromo, chloro, fluoro, hydroxy, methoxy, ethoxy, amino, or dimethylamino.

71. The compound of claim 70, wherein the substituents on  $R^2$  are independently selected from bromo, chloro, fluoro, hydroxy, methoxy, and ethoxy.

72. The compound of claim 71, wherein the substituents on  $R^2$  are at one or more of positions 3- and 4- of the phenyl ring, in relation to the sulfonamido group.

73. The compound of claim 72, wherein  $R^2$  is monosubstituted phenyl.

74. The compound of claim 73, wherein the compound is  
4-Methoxy-1-pentafluorophenylsulfonamidobenzene,  
3-Hydroxy-1-pentafluorophenylsulfonamidobenzene,  
4-Hydroxy-1-pentafluorophenylsulfonamidobenzene,  
4-Ethoxy-1-pentafluorophenylsulfonamidobenzene,  
3-Ethoxy-1-pentafluorophenylsulfonamidobenzene, or  
3-Methoxy-1-pentafluorophenylsulfonamidobenzene.

75. The compound of claim 73, wherein the compound is  
3-Chloro-1-pentafluorophenylsulfonamidobenzene, or

Q<sup>1</sup> 5  
cont

10  
20  
30  
40  
50  
60  
70  
80  
90  
100

4-Chloro-1-pentafluorophenylsulfonamidobenzene.

76. The compound of claim 72, wherein R<sup>2</sup> is disubstituted phenyl.

77. The compound of claim 76, wherein the compound is

1,2-Dimethoxy-4-pentafluorophenylsulfonamidobenzene,

2-Hydroxy-1-methoxy-4-pentafluorophenylsulfonamidobenzene,

1,2-Dihydroxy-4-pentafluorophenylsulfonamidobenzene,

2-Hydroxy-1-methoxy-4-pentafluorophenylsulfonamidobenzene, monosodium salt, or

2-Hydroxy-1-methoxy-4-pentafluorophenylsulfonamidobenzene, monopotassium salt.

78. The compound of claim 76, wherein the compound is

2-Fluoro-1-methoxy-4-pentafluorophenylsulfonamidobenzene,

2-Bromo-1-methoxy-4-pentafluorophenylsulfonamidobenzene,

2-Chloro-1-methoxy-4-pentafluorophenylsulfonamidobenzene,

2-Fluoro-1-methoxy-4-pentafluorophenylsulfonamidobenzene, sodium salt, or

2-Fluoro-1-methoxy-4-pentafluorophenylsulfonamidobenzene, potassium salt.

79. The compound of claim 77, wherein the compound is

2-Hydroxy-1-methoxy-4-pentafluorophenylsulfonamidobenzene, or

2-Hydroxy-1-methoxy-4-pentafluorophenylsulfonamidobenzene, monosodium salt.

80. The compound of claim 78, wherein the compound is

2-Fluoro-1-methoxy-4-pentafluorophenylsulfonamidobenzene, or

2-Fluoro-1-methoxy-4-pentafluorophenylsulfonamidobenzene, sodium salt.

81. The compound of claim 80, wherein the compound is

2-Fluoro-1-methoxy-4-pentafluorophenylsulfonamidobenzene.

82. The compound of claim 80, wherein the compound is

2-Fluoro-1-methoxy-4-pentafluorophenylsulfonamidobenzene, sodium salt.

Q1  
cont

5  
10  
15  
20  
25  
30

83. The compound of claim 72, wherein  $R^2$  is trisubstituted phenyl.

84. The compound of claim 78, wherein the compound is 2-Bromo-1-methoxy-4-pentafluorophenylsulfonamidobenzene, or 2-Chloro-1-methoxy-4-pentafluorophenylsulfonamidobenzene.

85. The compound of claim 69, wherein the compound is 1,2-Dimethyl-4-pentafluorophenylsulfonamidobenzene.

86. The compound of claim 63, wherein the compound is 3-Phenoxy-1-pentafluorophenylsulfonamidobenzene.

87. The compound of claim 62, wherein  $R^2$  is a phenyl ring substituted by a heterocyclic group at the 4- position, in relation to the sulfonamido group.

88. The compound of claim 74, wherein the compound is 4-Methoxy-1-pentafluorophenylsulfonamidobenzene.

89. The compound of claim 61, wherein  $R^1$  and  $R^2$  are covalently joined in a moiety that forms a 5- or 6- membered heterocyclic ring with the nitrogen atom of  $NR^1R^2$ .

90. The compound of claim 89, wherein  $R^1$  is a  $-CH=CH-$  group linked to the 2- position of the  $R^2$  phenyl group, in relation to the sulfonamido group, forming an optionally substituted indole.

91. The compound of claim 90, wherein the compound is 1-(Pentafluorophenylsulfonyl)indole.

92. The compound of claim 89, wherein  $R^1$  is a  $-(CH_2)_3-$  group linked to the 2- position of the  $R^2$  phenyl group, in relation to the sulfonamido group, forming an optionally

a'  
cont<sup>5</sup>

105007-472266

substituted 1,2,3,4-tetrahydroquinoline.

93. The compound of claim 61, wherein the compound is

2-Hydroxy-1-methoxy-4-[N-(5-hydroxypent-1-yl)pentafluorophenyl-sulfonamido]benzene,

4-Methoxy-1-[N-(2-propenyl)pentafluorophenylsulfonamido]benzene,

4-Methoxy-1-[N-(4-pentenyl)pentafluorophenylsulfonamido]benzene,

1-[N-(2,3-Dihydroxypropyl) pentafluorophenylsulfonamido]-4-methoxybenzene,

1-[N-(3,4-Dihydroxybutyl)pentafluorophenylsulfonamido]-4-methoxybenzene,

1-[N-(4,5-Dihydroxypentyl)pentafluorophenylsulfonamido]-4-methoxybenzene,

1-[N-(4-hydroxybutyl)pentafluorophenylsulfonamido]-4-methoxybenzene, or

4-Methoxy-1-[N-(5-hydroxypentyl)pentafluorophenylsulfonamido]benzene.

94. The composition of any of claim 1-42, or a method of any of claim 43-60, or a compound of any of claim 61-93, wherein the compound regulates LDL receptor gene expression.

405007-6425

a  
cont